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- ART. VII. — 1. *Geographical Studies by the late PROFESSOR CARL RITTER, of Berlin. Translated from the original German, by WILLIAM LEONHARD GAGE.* Boston : Gould and Lincoln. 1863. 12mo. pp. xii., 356.
2. *Einleitung zur allgemeinen vergleichenden Geographie, etc.* Berlin. 1852. 8vo.
3. *Vorlesungen an der Universität zu Berlin gehalten von CARL RITTER.* Herausgegeben von H. A. DANIEL. 1. *Geschichte der Erdkunde.* 2. *Allgemeine Erdkunde.* 3. *Europa.* 3 vols. Berlin. 1861–63. 8vo.
4. *Zur Erinnerung an Carl Ritter.* Von DR. G. KRAMER. (*Zeitschrift für allgemeine Erdkunde.* 1859.)
5. *Carl Ritter, an Address to the American Geographical Society, February 16, 1860.* By PROFESSOR ARNOLD GUYOT. (*Journal of the American Geographical and Statistical Society*, Vol. II. 1860.)

THE name of Carl Ritter is familiarly known to all who are acquainted with the progress of Physical Geography. Even among those who have not read a page of his writings his reputation is established as one of the foremost philosophers of the nineteenth century. It is generally conceded that few indeed, in any age, have done so much as he to generalize our knowledge of the globe, and show its adaptation to the wants of man.

Now and then, in every department of human activity, there appears a creative mind ; as frequently in literature and science as in politics, statesmanship, and strategy. Such a mind sees old facts in new combinations, brings order out of confusion, deduces method from chaos. Such a mind seems to have the power of crystallizing knowledge, of shaping into forms of symmetry and beauty materials which were before incoherent, if not dissimilar. Such men exhibit the power of genius, discovering treasures which can never again be hid, and revealing truths which will never vanish from the ken of their fellow-men. Such thinkers give a wonderful impulse to the studies of others, exciting attention, suggesting inquiries, and pointing out new and conclusive methods of investigation. It is often

the case that their opinions and methods become more widely known through the writings of their followers and pupils than by their own statements.

To this class of scholars belongs Carl Ritter. Instead of merely repeating the tedious and burdensome mass of facts which had been gathered in the books and taught in the schools under the name of Geography, he deduced from a wide range of study a few definite principles, obvious enough when once proclaimed, but never distinctly and sharply set forth until he gave them utterance. He illustrated these principles by wide observation, extended learning, and the exercise of remarkable sagacity. He discovered, in the aggregation of items which mankind had been for ages collecting, some of the laws which underlie phenomena, — relations which control activities and results, — indications of a plan which evinces at once the wisdom and the power of a Supreme Creator. Having discerned and announced these fundamental principles, he applied them to the elucidation of all which we know of the globe and its inhabitants.

The world was ready for such a teacher. Every department of natural and physical science had begun to make progress on the highway of truth, and in many different directions conclusions had been reached which are as sure to stand as the earth itself, upon which they are based. The generation of travellers, whose glory consisted in relating that which was strange and amusing, rather than that which was important and characteristic, and whose aim seemed to be to surpass one another in the narration of exciting extravagances, had given way to a class of truly learned explorers, trained in the methods of exact science, and whose only aim was to ascertain the truth. The rude measurements of the eye and the shrewd guesses of experts were superseded by the more precise revelations of the barometer and level. The governments of the civilized world had begun to vie with one another in sending out expeditions, not to discover territories before unheard of, but to bring back positive and permanently trustworthy information respecting regions imperfectly known. In all civilized countries, and even in uncivilized lands controlled by enlightened nations, topographical and hydrographical surveys, made with the most

accurate apparatus which art has devised, had begun to furnish minute and exact information respecting the structure of the earth. Increased facilities of locomotion and of postal communication made distant investigations possible at a moderate cost. Zoölogy, botany, and mineralogy were studied almost as new sciences, so new and revolutionary were the methods of classification upon which they proceeded. The laws of climate assumed shape. The philosophical study of language cast its light upon the origin of races, while archæological and historical investigations led to definite knowledge respecting the careers of nations, far more extensive than had been attained in any previous century.

Under these circumstances, it is evident that the time had come for bringing together and compacting results which had been reached in very different paths of investigation. Eratosthenes, says Ritter, in developing the first astronomical geography; Herodotus and Strabo, the first geographical history and historical geography; Cluver, the first ancient geography; Bergmann, the first geographical physics; and Büsching, the first application of geography to politics, — were all laying the foundations for a thorough system of physical geography. So also Werner, by his geological studies; Saussure, De Luc, and Humboldt, by revealing the connection of the earth and the atmosphere, and Buffon, by showing the connection of animate and inanimate nature; Zimmermann, by showing the relations of animals to the surface of the earth, and Blumenbach, by his observations on the races of men, — were all preparing the way for the new science of geography.

It was to the development of this new science, General Comparative Physical Geography, as he termed it, that Ritter devoted the powers of his well-trained mind, not in a bold or boastful spirit, but calmly, steadily, and successfully, with the quiet assurance of one who knows he is studying and announcing truth. He does not claim to have originated the conception which he endeavors to amplify, illustrate, and defend. To Humboldt he assigns the title of the Founder of Physical Geography. "He has opened a field," says Ritter, "which we with our weak powers shall try to till."

What this science became under his skilful culture we shall

presently attempt to show. It only remains for us, in this connection, to call attention to the conviction underlying all which Ritter has announced. "The ideal background, hypothesis, theory, call it what you will," as he says, "the point of departure," as he again expresses it, "does not lie in the conception of a single truth, but in the union of all truths." Man was fitted to dwell in the earth; the earth was designed as the home of the human race. Nature and history are alike developments of a Creator's plan.

From this general statement of Ritter's position, let us proceed to look at his life.

Nearly five years have passed since Humboldt, at the age of ninety, and Ritter, at the age of eighty, were brought, within the same semester, to the close of their mortal career. No full biography of either has yet been given to the public, nor do we hear of any which is in preparation. Unfortunately for memorial purposes, the libraries of both these scholars, soon after their decease, were transferred to the booksellers. One was immediately scattered beneath the hammer of the auctioneer, and the other, though still an unbroken collection, is likely to be dispersed at a very early day. If these libraries were only collections of printed books, this distribution, though it might be regretted, could hardly interfere with the preparation of elaborate memoirs of the distinguished owners; but there is reason to think that a large amount of *personalia*, including manuscript annotations, original drawings and sketches, letters, original memoranda and memoirs, were disposed of with the books, and may never be accessible again to the inquiries of a biographer.

Humboldt was in every sense so much of a public man,—he had travelled so widely, he had made his researches with the aid of so many collaborators, he had received the visits of so many men of science from every civilized land, and had always written letters with so free a hand,—that his career, if not already thoroughly known, can be traced in almost every step with comparative ease. The unfortunate publication of his correspondence with the friend whom he had selected, if not as a biographer, at least as a confidant, to whom each transient compliment and each spiteful fling might be transmitted, has

checked, we presume, the curiosity of his admirers to know more of his inner life.

With regard to Ritter, on the contrary, all that is known most clearly indicates that all we can learn of his character will sustain our respect and affection. Every one who came into personal relations with him was as much impressed with the simplicity and excellence of his heart, as with the learning and sagacity of his mind. But his life, compared with that of Humboldt, was screened from observation. He lived at home, among his books; and, although accessible to every one who wished to make his acquaintance, his renown was not of that brilliant character which caused him to be the observed of all observers. We trust that among his numerous admiring pupils some one will be found to reveal to us more than we now know of his inborn characteristics of mind and heart, the early steps of his intellectual discipline, and his later processes of literary production, his domestic life, and his religious sentiments. No one apprehends that the memoranda of any Varnhagen von Ense will cancel our enthusiasm as it increases our knowledge.

Several appreciative sketches of Ritter's life, most if not all of them written by those who were personally acquainted with him, have already been printed. Hofmann, Strauss, Bogekamp, and Kramer, among his own countrymen, Lortet in France, Guyot and Gage in this country, have all made public their estimates of the great geographer. The most recent of these is that of Mr. Gage; that which shows the most acquaintance with the incidents of Ritter's life is that of Dr. Kramer; that which indicates the most complete appreciation of, and sympathy with, the intellectual and moral characteristics of the great master is that of Professor Guyot. From these various sources it is easy for us to prepare an outline of his career. It is the story of one whose early life was beset with difficulties, which at first were decided obstacles to his progress, but which in the end contributed abundantly to his intellectual vigor and his eminent learning.

Carl Ritter, the son of a physician poor in material possessions, but skilled and honored in his profession, was born on the edge of the Harz Mountains in the town of Quedlinburg,

not many miles southwest of Magdeburg, on the 7th of August, 1779. When he was about five years old his father died, leaving a widow and five small children, with very slender means of support. It happened that Christian Gotthilf Salzmann, a well-known teacher, who had been associated with Basedow in the Philanthropinum at Dessau, was then about to open a school for boys at Schnepfenthal, in which the peculiar views of education advocated by "the Philanthropinists" were to be faithfully carried out. Among the characteristics of "the new schools" of that day may be mentioned the special attention which was paid to the modern languages, instead of the ancient, and the general preference of what in these times would be termed "practical" studies to those of a more abstract and scientific character. Physical education received especial care. Religious culture was neglected, though a pure morality was taught. Those who are familiar with the pedagogical history of Germany are well aware of the merits, and the no less obvious defects, of the Philanthropinist teachers. Salzmann appears to have been one of the best of the innovators. Even Raumer, who totally dislikes the peculiar views which he advocated, bears testimony, in his *History of Education*, to the honest, conscientious, and persevering activity of Salzmann and Campe.

The deficiencies in his classical training Ritter made up at a later day by his own industrious efforts, and certainly his heart was not chilled by the cold rationalism which is said to have reigned at Schnepfenthal.

There were some advantages in the school, and one which seems to have exerted a strong influence on the rising geographer was the geographical position of Schnepfenthal. "This lovely spot," says Dr. Kramer, "which Ritter always considered his true home, was situated at one end of the Thuringian forest, and was surrounded by a charming landscape, having in one direction a view of a far-extending fertile plain, richly adorned with cities and villages; while in the other there rose well-timbered mountains of various shapes, intersected by fine valleys. All around was activity and life. Here he received from his early youth the most vivid impression of the glory of God's creation, of the variety of formations

on the surface of the earth, and their special relations to the life upon them."

The youthful Ritter was favored, not only by the position of the school, but by having as one of his chief instructors the tutor of his earlier years, T. C. F. GutsMuths, a native of Quedlinburg, whose acquaintance Salzmann made simultaneously with that of the Ritter family, and whose services were gladly secured for the new school at Schnepfenthal. GutsMuths was a teacher of geography, as well as of gymnastics, in Salzmann's school. His instructions were distinguished by thoroughness, and by the ingenuity of his illustrations, as is exemplified by the travels about home to which he accustomed his pupils, by the maps which he would draw, and by other of his contrivances to awaken an interest in study. Between Ritter and this teacher there sprang up a warm friendship, which lasted till death interrupted it. GutsMuths, as well as Ritter, became the author of various geographical works, and this similarity of tastes and studies undoubtedly cemented their affection.

After eleven years of school-boy life at Schnepfenthal, Ritter went to Halle for the purpose of attending the lectures of the University. He was enabled to do so by the aid of Mr. Hollweg, a wealthy merchant of Frankfort, who furnished him with pecuniary assistance on condition that, at the end of his University studies, he would become the teacher of his sons. While residing in Halle he was an inmate of the family of A. H. Niemeyer, just then conspicuous by the publication of his work on the Principles of Education and Instruction. Halle was then distinguished for its intellectual activity, and its nearness to the University of Jena and the ducal court at Weimar contributed somewhat to its advantages. An interesting picture of the university life at Halle, a year or two later than the time of Ritter's residence, is given by Von Raumer in his History of Education.

When Ritter had resided two years at Halle, he proceeded to fulfil his engagement as a private instructor in Mr. Hollweg's family. The instructions of the school-room were varied by frequent journeys with his pupils; and the opportunity which he thus enjoyed of becoming personally acquainted with

Italy and Switzerland, the most interesting physical regions in Europe, quickened without a doubt his fondness for the study of nature and history. While at Frankfort, he saw something of Humboldt and Von Buch ; Matthiae and Grotefend taught him Greek and Latin ; Ebel, the author of a work on Switzerland, became his personal friend ; his pupils, one of whom was a son of the celebrated physician Soemmering, were full of promise ; and this whole period of early discipline appears to have been of the greatest value in training him for after work. He was for twenty-one years employed by Mr. Hollweg ; but his tasks were freed from monotony by the journeys referred to, and by his residence with his pupils at the University of Göttingen from 1814 to 1816. Whether quietly engaged at Frankfort, or actively occupied by travelling, he was observing, inquiring, reflecting, and describing.

In 1819 Ritter's engagements with the Hollwegs were over, and his more public career began. We have dwelt at some length on the earlier portions of his life, because they obviously contain the germs of his later distinction. Good parentage, good native impulses, good surroundings, good teachings, and good friends had all combined, as we have seen, to develop a symmetrical character, well trained in various branches of knowledge, practised both in observation and reflection, and decidedly interested in the study of geography and history. Although he had not become famous, his reputation was high, his name was spotless.

As it will appear when we refer to his published works, Ritter had already ventured upon the preparation of two or three treatises in his chosen departments. These were so well received that he was invited to become Professor of History in the Gymnasium at Frankfort. This was the beginning of the public life to which all previous training had been undesignedly preparatory. Within a twelvemonth, still more conspicuous and honorable positions were offered him. He was invited to Berlin, with the appointment of a Professorship in the University of that city and also in the Military School. He accepted the call, and the capital of Prussia became his home for the remainder of his life. We will not attempt to recount the stations of influence and honor which he occupied

during the years of his maturity and age. At first, it is true, he was almost unknown among the many men of brilliant powers whom the University had drawn together. When he first announced his lectures, no hearers came forward, and the next term but a few presented themselves. But this state of things soon changed, and in 1823 his original lecture-room was so full that he was compelled to take a larger one. From that time forward his successive courses were among the most attractive and instructive which were given in Berlin. The testimony of all his hearers is unanimous as to his eloquence, his suggestiveness, his skill in awakening a love of knowledge, and in imparting knowledge.

Professor Guyot, who attended his lectures between 1830 and 1835, remarks that Ritter, during his long career as an academic teacher, achieved a success rarely equalled. "Few can boast," he continues, "of a more constant popularity. . . . Not by any effort of striking eloquence of words or manner did he secure a willing ear from his pupils, but by offering to their eyes a thorough, substantial, and yet pleasant picture of the vivid images and ideas which filled his own mind. . . . His words were always instructive and suggestive. The hearer could not help being impressed with the fulness and thoroughness of knowledge, the perfect mastery and love of his subject, evinced by the lecturer, while at the same time he was charmed by the happy selection of the facts presented."

In like manner, Mr. Gage, who attended Ritter's lectures some twenty years later, refers to their popularity. "When I was in Berlin," he says, "five years ago [1855], Ritter's room was still full. More than three hundred young men were hearing his lectures. He knew his art well. With almost womanly tact he seized upon those features which present circumstances made interesting, and culled out of the immense masses of matter lying in his mind just what he could use with the greatest profit."

Ritter's influence was not confined to the lecture-room. In all the institutions of learning, in the Academy of Sciences, in the court circles, in all projects respecting scientific expeditions, he was appealed to constantly as a wise and interested

adviser, so that, after nearly ten years' residence in Berlin, he appears to have become so much engrossed by the various scientific and literary duties which were imposed on him, that he determined to concentrate his attention more earnestly on his geographical studies. The fruit of his industry was made apparent in the successive volumes which he gave to the public. He became more than ever a student, at a period in life when many men give up diligent attempts to acquire knowledge, and content themselves with what they have already learned. For relaxation in the summer months he made frequent tours to different parts of the Continent, but never went so far as to visit the Holy Land and Egypt. The classes which he taught, the sessions of the Academy of Sciences, and the less stately but more interesting meetings of the Geographical Society of which he was the founder, brought him into such constant contact with other minds, that, although he dwelt among his books, he was far from being a recluse. In these engrossing occupations his years glided happily away till their close on the 28th of September, 1859. His wife, whom he had married about the time of his removal to Berlin, had died nearly twenty years before him.

Thus it appears that his life of fourscore years was divided into two nearly equal epochs,—the period of preparation and the period of production. Penniless and friendless at the outset of his life, he was happily led forward, by one good providence after another, and by paths which often seemed of very uncertain termination, to those attainments which all the world admired; and when, by the various discipline of forty years, he had reached maturity and vigor, forty years more of comparative ease and dignity were allotted to him, and were improved with unwavering diligence for the service of mankind.

From this sketch of the outward life of Ritter, drawn, as we have intimated, from the recollections of his personal friends, especially from Kramer and Guyot, we proceed to notice his work as an author.

His literary productions may be briefly enumerated as consisting of three elaborate treatises on three separate continents, Europe, Africa, and Asia; several learned dissertations presented to the Berlin Academy, a few of which were afterwards

published in a volume by themselves ; numerous occasional essays on geographical topics, most of which were contributed to the *Zeitschrift für Erdkunde* ; and several courses of lectures, three series of which, left by the author in a nearly complete condition, have been published since his death by Dr. H. A. Daniel.

We shall merely attempt to acquaint the reader with the general scope of these various works ; to do anything more, to enter into any elaborate examination or estimate of their value, would lead us quite beyond the limits of an article like this.

Europe was the first of Ritter's Continental studies. As early as 1806 he published six charts of Europe, and five years later, in 1811, a Geography of Europe, in two octavo volumes. Neither of these works have come under our eye, but we are informed that they are only the *incunabula* of what was lying in his mind. He had not yet made the extended journeys to which we have referred, and we infer that his writings indicated that he was more a student of books than an observer of nature. His views passed for what they were worth ; the work in which they were published was not reissued by the author. A few years later, in 1817-18, after travelling widely, and after extensive researches in the libraries of Göttingen and Berlin, Ritter issued the earliest portion of *Die Erdkunde*, — the work which became the master-work of his lifetime. Although it was limited to two volumes, and to the description of two continents only, it is evident from the title, the introduction, and the method of discussion, that the author had made a great advance from his former position, and that he was already in command of new and far-reaching principles of geographical study. The title alone is highly significant. It remained unchanged through all the expanding series of volumes of which these two early volumes were the germ. It reads as follows : " Geography in Relation to Nature and the History of Mankind ; or General Comparative Geography, as a sure Basis for studying and teaching the Physical and Historical Sciences."

The Introduction to this work, as it was written in 1818, is given in Mr. Gage's volume. We would recommend its pe-

rusal to every reader who desires to appreciate the task which Ritter proposed to himself. It there appears what was his conception of a "General Comparative Geography"; how the continents, in their vertical as well as horizontal dimensions, the land, the ocean, and the atmosphere, the three kingdoms of nature, and the human race, are regarded as combining to make the World, a unit which must be studied in the light of history and of natural science, if we would think of fully understanding either the whole or any portion of it.

In 1822 Ritter republished his volume on Africa, bringing down the work to the consideration of all discoveries made as late as 1820. Ten years afterwards he began to republish the volume on Asia, taking the year 1830 as the date to which all his statements had reference. He promised to complete his description of this continent in four volumes, — the first being devoted to the high plateaux and mountains of the East, the second to the Southern Indies, and the remaining two to Western Asia. These completed, he proposed to take up Europe once more, and discuss its geography on the same plan. He little realized the task he was undertaking; or rather he was unable to foresee the immense amount of material which would come into his possession, and the increasing interest which his mind would take in every characteristic detail, however minute. Twenty-seven years rolled by; and twenty stout volumes, numbering in all some twenty thousand pages (exclusive of the indexes), were published on the Geography of Asia. But even this part of the work was not complete when death terminated the labors of the author. The task which he had entered upon was too vast for the lifetime of a single man. Only an association of scholars could execute a scheme so comprehensive.

Although this enlarged revision of the *Erdkunde von Asien* was left unfinished, the plan of the author was developed in it, and many separate monographs which the work contains were so thoroughly elaborated that they of necessity will be the basis of all future investigations. Ritter's conception of a continent was that of a vast plateau, bordered on every side by transition-lands and terraces, which terminate in low lands on the level of the sea. The high lands of Asia are divided into two clear

divisions by the mountains of the Hindu-Kush, the eastern plateau being far higher, far more extended, and surmounted by far higher chains of mountains, than the plateau of the west. His description of the continent begins with the Eastern highlands, to which he gives three volumes, — followed by two more on the Indian peninsulas, — making five in all. This constitutes the first division of the work. Passing from the Oriental to the Occidental part of the continent, he devotes one volume to the transition region between the eastern and western plateaus, including here not only a detailed examination of the Hindu-Kush, but also of the Indus river-system on the south, and of the Turkestan high land on the north. The Iranian plateau is next discussed in two volumes. An equal amount of space is devoted to Mesopotamia, and the river system of the twin-streams Tigris and Euphrates. Two volumes are then occupied with Arabia. Syria (including the peninsula of Sinai and Palestine) is next taken up, expanding with the increasing acquisitions of the author into six volumes; and the work terminates with a study of Asia Minor, which the author hoped to complete in three volumes, but of which two only appeared.

From this summary of the chief contents of the work, it is obvious that the great natural subdivisions of the continent, and not political dominions, were prominent in the author's mind. He does indeed discuss historical movements; but he always regards them as in some measure controlled and guided by the physical structure of countries. The various monographs which constitute the latter portion of the work are models of geographical studies. Scattered through all the volumes are elaborate essays — *excursus* they may perhaps be called — on the various peculiar features and characteristics of the different countries.

We have already mentioned that Ritter's pen was not employed solely in the production of this great work. As a member of the Academy of Sciences, he was continually making contributions to the transactions of that body, in some of which are to be found the clearest statements which he has given of his conception of the true science of geography. The better to bring these views before the public, he issued five of

his academic dissertations, together with the original Introduction to the *Erdkunde*, in an octavo volume designed for general circulation. This volume has been recently translated by Mr. Gage. The collection, it must be acknowledged, is quite fragmentary in its structure. The earliest of its essays was written in 1818, the latest in 1850, at an interval of more than thirty years. In reproducing them, the author does not emend nor modernize any of his statements or illustrations, but contents himself with briefly reminding the reader of the rapid advancement which has been made in our knowledge of the globe since the earlier pages were written. Notwithstanding this lack of freshness, no better selection probably could have been made, when Mr. Gage made his translation, to exhibit the philosophy of Ritter. After a general survey of the province of physical geography and its relations to other sciences, a view is given of the structure of the great land-masses of the globe, bringing clearly to view the importance of considering vertical as well as horizontal measurements, reliefs as well as superficial areas. This is followed by an exhibition of the relations which the continents have to one another arising from their geographical position and horizontal dimensions. The application of geometrical figures and of numerical statements in delineating geographical figures and relations, is next briefly discussed. The connection between the world and human history is considered in the three remaining disquisitions, one of which treats of the historical element in geography, and another of the geographical element in history.

We are heartily glad that this volume has been made accessible to our countrymen in an English form. It is by no means easy reading, either in the original or the translation. The originality of the author's conceptions, his imaginative phraseology, and his involved sentences, are obstacles which require a little effort to overcome; but let a thoughtful reader master the fundamental positions of the writer, and enter into his spirit, and he will be richly repaid for the exertion. We commend the volume especially to all teachers of geography, trusting that Mr. Gage will be rewarded as he deserves for the evident labor and skill which are evinced in his version. Besides these academic *Abhandlungen*, which have been trans-

lated, Ritter at different times directed his attention to the following themes, all of which are treated in a masterly way. In 1824 he discussed the history of Arabia Petræa and its inhabitants ; in 1829, the Age of the Runen Calendar ; in 1830 he gave a sketch of the Himalayan mountain system ; in 1839 he investigated the geographical distribution of sugar-cane, and in 1851 that of cotton ; in 1854 he examined various historical monuments from Northern Syria. These treatises may be found in the Berlin Transactions. Two or three similar treatises appeared as separate pamphlets.

Ritter's contributions to the Berlin *Zeitschrift für Erdkunde*, and in the preceding *Monatsberichten* of the Berlin Geographical Society, are, according to our count, more than seventy in number. Some of them, it is true, are brief notes, which it cost him but little effort to prepare ; but others of the essays are elaborate discussions, not so much of general principles as of specific questions or announcements. He was in the receipt of original information, and of printed documents difficult to obtain, sent to him from various distant lands by residents or travellers who knew of his universal knowledge. Such intelligence he often made the basis of a communication to the Geographical Society, adding his own comments or strictures upon the statements of others. To review this phase of his activity, would require far more space than we can here command.

Notwithstanding all these voluminous writings, we are of opinion that Ritter's greatest direct influence was exerted in the lecture-room. Forty successive years devoted to the work of instructing large classes of young men, numbered usually by scores, and sometimes by hundreds, enabled him to impress his intellectual character on the rising generation of scholars, and it was through them, and through their lectures, text-books, travels, and observations, that he chiefly acted on the public at large. A lack of sharp, clear statement, of that precision of style in which French writers excel, is sometimes complained of by the readers of Ritter's volumes. But this defect, if such we may call it, was not obvious in the lecture-room, where the tones of his voice, the informal, almost conversational explanations which he would give, and the rapidly-drawn illustrative sketches which he put on the blackboard, removed all doubt

in regard to his meaning. While he lived, none of his lectures were printed, but since his death, as we have already remarked, they have not been entirely withheld. Dr. H. A. Daniel, Professor in the Royal Pädagogium at Halle, and himself the author of a Hand-book of Geography highly valued in Germany, has published three successive series of lectures, basing the text on Ritter's own notes, compared with and expanded by the *Heften* of his pupils, those elaborate transcripts of the Professor's words, which German students, above all others, know how to make. In these three courses we see more distinct than anywhere else the teacher of geography. Free from excessive details, systematic, clear, bold, and fresh, they are better fitted to bring up to the mind Ritter, the university instructor, than all his other writings. Elsewhere he is the academician, the encyclopedist, the President of the Geographical Society; here he is the teacher surrounded by his pupils, appreciating their wants, knowing their impressibility, and eager to see them enter upon the paths in which he has himself found such enjoyment and profit. These little volumes, more even than any others, we commend to the attention of all who would become acquainted with the master. The first series is devoted to the History of Geography and Discovery. Beginning with remote antiquity, he traces the progress of our knowledge of the earth through the Hebrews, Egyptians, and Phœnicians, the Greeks, especially in the time of Alexander the Great, the Indians and Chinese, and finally the Romans. Then proceeding to the Middle Ages, he takes up the great irruption of the Barbarians, the spread of Christianity, the conquests of the Mohammedans and the establishment of the Empire of the Caliphs, the discoveries and exploits of the Northmen, the rise of the commercial republics of Italy, and the discoveries of the Portuguese down to the time of Columbus.

The second series of lectures is an exposition of the underlying principles of Physical Geography. In these discourses Ritter shows what is the proper field of his favorite science, discusses the sources from which it is derived, and points out the various auxiliary branches of knowledge. He next takes up the globe, and calls attention to its most general features;—

its shape; its three constituent elements, — air, water, and land; the marked contrast between the land and water hemispheres; the position of the continents, and their influence upon the progress of history. He goes on from this to a special examination of the surface of the earth, first in its vertical and then in its horizontal dimensions, — dwelling upon the characteristic highlands, or plateaus, and the corresponding lowlands, or plains; pointing out the greater elevations of mountain-chains, and the remarkable continental depressions, like that of the Pontine and Caspian Seas; and also characterizing the streams of the earth, those watercourses which become transition regions between the mountains and the plains. Finally, he discusses the horizontal forms of the land, — the several continents, with their projecting peninsulas, indenting seas, and adjacent archipelagos and islands.

In the third volume Europe is thoroughly and methodically described in all its great natural features, — mountain-chains, plateaus, plains, and watercourses, — including not only those of the main continental trunk, but those also of every adjacent member, peninsula, and island. The principles laid down in an abstract form in the second series are here exhibited in the concrete.

Thus vast, comprehensive, and detailed were the studies of Ritter. Every page of his writing evinces a thorough acquaintance with the sources of information, singular good judgment in respect to the comparative weight of different authorities, vivid conceptions of the actual appearance and structure of every region which he describes, and a peculiar power of eliminating what is essential, characteristic, and permanent from that which is only transient or insignificant. His powers of generalization were of the highest order.

We have already made several incidental allusions to the original methods and principles of which Ritter was the author. Those who are desirous of gaining a more extended view of his writings may consult a sketch by Dr. Bogekamp in Mr. Gage's volume, or the eulogy before referred to, by Professor Guyot. We will only notice at the present time some of the most general of Ritter's conceptions.

He regarded the world as an integer, an organized body,

every part of which had an important relation to every other part, and all the parts of which were essential to the completeness of the whole. In the complex arrangement of land and water, hill and valley, peninsula and highland, plateau and plain, he saw no confusion, but order, arrangement, and adaptation to an end. To him the earth was like a tree, with root, trunk, branch, leaf, blossom, fruit, each necessary to the perfection of the whole ; or like the human form, with chest, head, and limbs, none of which can be removed without obvious injury to the vitality of the organism. Sometimes he went so far as to use a still more forcible expression, saying that the globe has a life of its own, — the winds, waters, and land-masses acting upon one another like animated organs, every region having its own function to perform, thus promoting the well-being of all the rest. To him these were no fanciful analogies. They were living truths, expressed in figures which may seem bold, and perhaps incomprehensible, to those who have not considered them, but established in his mind on foundations which cannot be shaken.

He claimed that Geography should not content itself with a mere description of the surface of the earth, but everywhere comparisons should be instituted. Both resemblances and contrasts are thus brought to view ; and phenomena hard to be understood in one region become quite intelligible when considered in the light gained elsewhere. The continents of the Old World, forming a closely compacted mass, are very differently constituted from those of the New World, stretched out, as it were, into a long and comparatively narrow extent. The three continents of the north have very different characteristics from the three continents which face them on the south, the former having thus far been the historical continents, fitted, by their more temperate climate, for the higher development of mankind. Not only are the continents to be compared with one another, but peninsulas, island groups, mountain chains, plateaus, plains, watercourses, inland seas, and oceans are to be connectedly considered, — for thus will the peculiarities of their structure be revealed, their part in the world's economy be indicated, and their influence on the progress of civilization be made apparent. Such comparisons not only serve us in the

solution of events which have already transpired ; they likewise foreshadow those which will occur. Again, he remarks, "Our earth is a star among the stars ; and shall not we who are on it prepare ourselves by the study of it for the contemplation of the universe and its Author ? "

Another principle, now universally recognized, to which Ritter early called attention, is the importance of taking into consideration vertical as well as horizontal dimensions in the study of the earth. Elevations of a few hundred feet produce changes in the entire aspect of a region, — the climate, the vegetation, the animal kingdom, the capabilities, necessities, and occupations of men, differing as decidedly as they do in an equal number of miles of horizontal separation. In all of Ritter's examinations of the world, the relief, the upheaval, the relation of high land to low land, are invariably considered. Every continent—not only so, but every member of a continent, every natural subdivision of the land—is to be regarded, not as a flat superficies, but as a solid body, diversified by many inequalities, and presenting differences as manifold and as important as those of its horizontal outlines. This mode of looking at the surface of the earth has happily become so familiar, that we need not dwell upon it, except to remind the reader that it was not always so common. When Humboldt applied this principle to the elucidation of the American continent, and Ritter showed its application to every portion of the globe, a vast stride was taken in the progress of geographical science.

Ritter always regarded the world as the dwelling-place of man. He was no materialist ; he did not consider that physical forces produced the social and moral condition of the race ; he never forgot the ascendancy of mind and will over inert matter, nor the triumphant subjugation of the earth to the necessities of man which has ever been in progress. But as the body is fitted to minister to the wants of the soul,—or as a convenient house is favorable, if not indispensable, to the intellectual and moral welfare of those who dwell within its walls,—so he considered that the earth was made to be the home of man. Thus geography and history are co-operating sciences, intimately connected, so that neither can dispense with the lessons of the other. Both exhibit the purposes of a

wise Creator. "This view," says Guyot, "was the normal synthesis required by the rapid progress of physical, ethnological, and historical sciences, which, since the beginning of this century, have shed so much light on the deeper nature of the physical world and of human society. It was that harmonic unity of elements, diverse and yet akin, craved by every philosophic mind conversant with the results of scientific inquiry. The philosophy of history, that science of modern times, hails now with joy a still younger sister, the philosophy of geography, the one a helper to the other; both forever as inseparable as man is from nature."

We are aware that these indications of Ritter's philosophy are only of the most general character; to see how they are applied, and especially to understand the numerous subordinate principles which they involve, we must take up some region, such as the continent of Europe, which he treats in a course of lectures; or the peninsula of Arabia, and the river-system of the Euphrates and Tigris, which are parts of the *Erkunde von Asien*. Thus only will his method be really understood.

We have said little as to Ritter's personal characteristics, but we should do him injustice if we did not refer to the simplicity, purity, and dignity of his private life, and to the respect which was bestowed upon him by all his contemporaries. His great intellectual qualities have been sufficiently indicated, his devoutness and elevation of soul were no less eminent. He was in the best sense a Christian philosopher, loving the truth supremely, and delighting everywhere to trace the harmony which exists between the works and word of the Creator.

His name is constantly associated in his fatherland with that of Humboldt. They were neighbors and friends through the latter part of their lives, ever maintaining the most friendly relations. Each spoke of the other in terms of high praise; each profited by the researches of the other. Ritter testifies that he could not have written his great work without Humboldt's travels and observations in the Old World and the New. Humboldt was continually showing his regard for Ritter by sending to him, as we are informed, the letters which he received on geographical subjects from various parts of the

world. "Let this go into Ritter's archives," he would say, as if that was the surest way of securing scientific utility.

But though their pursuits were kindred, they were also very different. Humboldt was endeavoring to interpret the physics of the globe, to study the laws which underlie all the purely natural phenomena. Heat, light, magnetism, earthquakes, volcanoes, the winds, the oceanic currents, were the themes of which he was most fond. The adaptation of the earth to human society, the effect of the world upon man, and the influence of man upon the earth, the laws of structure and climate in their relations to animal and vegetable life, the distribution of animals and vegetables subservient to man, the geographical basis in the progress of civilization, the differences of races and nations, were favorite themes with Ritter. One loved most the physical, the other the historical, study of the earth. One was emphatically a naturalist, the other a humanist. In other words, Humboldt was devoted to the study of the material creation, not indeed to the exclusion of man, but with a preponderating interest in natural phenomena; Ritter, on the other hand, was a student of history, and in all his geographical inquiries Man, his necessities, aptitudes, and deeds, was present. Humboldt was emphatically a scientific explorer, observing and collecting in distant climes where the structure of the globe is most remarkable and interesting, and then returning to work out his conclusions. Ritter was chiefly the man of books, the student at home, weighing the testimony of early and recent explorers, harmonizing their statements, and deducing general laws from the special researches of many investigators.

In quoting the words of Professor Guyot, early in this article, respecting the little real knowledge of Ritter which there is in this country, we were disposed to make some qualification of his remark. We think that Mr. Guyot himself has done a great deal to make our countrymen familiar with the views of the German geographer. We well remember the delight with which, many years ago, we listened to his eloquent exhibition of the principles of Physical Geography as laid down by Humboldt, Steffens, and Ritter. We have read and re-read his "Earth and Man," one of the best presentations of this new

science to be met with in any language, if not the very best. We have seen that, by his lectures in the Normal Schools and at the Teachers' Institutes, there has been awakened among the teachers, especially of New England, a real love of geographical science, and an earnest, intelligent inquiry for more detailed treatises than any which are now accessible in English, embodying the principles in their manifold applications. We are confident that in the next few years a great impulse will be given to studies of this character, and, as the years roll on, we look forward to increasing honor among our countrymen for the life and labors of Carl Ritter.

ART. VIII.—1. *Annual Report of the Western Sanitary Commission for the Years ending July, 1862, and July, 1863.* St. Louis, Mo.

2. *Circular of Mississippi Valley Sanitary Fair, to be held in St. Louis, May 17th, 1864.* Major-General W. S. ROSECRANS, President.

IN the article on the Sanitary Commission in our January number, our readers will have observed that the name of St. Louis, Missouri, does not appear on the roll of honor. The State is referred to, in a single line, as being the only loyal State out of the circle of sanitary allegiance. By what cause it has been thus left out does not appear. Nor is it said whether that State and city, which have been so prominent in the war for liberty, have done or attempted anything whatever in the work of humanity. Those of our readers who know nothing of the facts have probably concluded that the circumstances of peculiar difficulty under which Missouri has been compelled to play her part,—the devastation of her territory by the Confederate invaders and guerilla bands of robbers, the destruction of her trade, the social dissensions among her own people, the prevailing “sympathy” of the wealthier classes for the Southern cause or trade, her rapid transition from slavery to freedom, changing all the relations and conduct of industrial pursuits, and the extraordinary demands upon her,